

IN THE CLAIMS

Please amend the claims as follows:

1 1. (PRESENTLY AMENDED) A common mode feedback circuit apparatus
2 comprising:

3 a first and a second node defining a differential node pair; and
4 a collective plurality of transconductors including a first plurality of
5 transconductors associated with the first node and a second plurality of
6 transconductors associated with the second node, wherein at least one
7 transconductor of the collective plurality has an adjustable transconductance,
8 wherein ~~the~~ a total transconductance of each of the first and second pluralities is
9 nominally halved between any adjustable transconductors and ~~the~~ remaining
10 transconductors of that plurality.

1 2. (ORIGINAL) The apparatus of claim 1 wherein the total transconductance
2 of each of the first and second pluralities is nominally halved between the set of
3 transconductors capable of being decoupled from its associated node and
4 recoupled to a complementary node and the remaining transconductors of that
5 plurality.

1 3. (ORIGINAL) The apparatus of claim 1 wherein each of the first and
2 second plurality of transconductors includes at least one transconductor with an
3 adjustable transconductance.

1 4. (ORIGINAL) The apparatus of claim 3 further comprising:
2 a calibration engine, wherein while in a calibration mode the calibration
3 engine varies each of the adjustable transconductances until a sensed differential
4 voltage across the differential node pair is substantially zero.

1 5. (PRESENTLY AMENDED) The apparatus of claim 4 further comprising:
2 a calibration signal voltage source; and
3 a plurality of switches for switching between a calibration mode and a
4 normal mode, wherein while in calibration mode the switches couple a common
5 mode voltage signal from a common mode node to non-adjustable
6 transconductors of the first and second pluralities, wherein the switches couple
7 each of the adjustable transconductors to their complementary nodes, wherein
8 the switches couple the calibration signal voltage source to the adjustable
9 transconductors, wherein a current generated by the adjustable transconductors
10 is proportional to the calibration signal voltage source, wherein the calibration
11 signal voltage source is independent of the common mode voltage signal.

1 6. (ORIGINAL) The apparatus of claim 5 wherein while in normal mode the
2 plurality of switches decouple the adjustable transconductors from the
3 calibration signal voltage source, decouple the adjustable transconductors from
4 their complementary nodes, and couple the adjustable transconductors to their
5 respective associated differential nodes.

1 7. (ORIGINAL) The apparatus of claim 1 wherein each of the first plurality
2 and second plurality comprises 2 transconductors.

1 8. (ORIGINAL) The apparatus of claim 7 wherein every transconductor of
2 the collective plurality has substantially a same nominal transconductance value.

1 9. (ORIGINAL) The apparatus of claim 1 wherein the circuitry is
2 implemented on an integrated circuit semiconductor die.

1 10. (ORIGINAL) The apparatus of claim 9 wherein the integrated circuit is a
2 complementary metal oxide semiconductor (CMOS) integrated circuit.

1 11. (ORIGINAL) The apparatus of claim 1 further comprising:
2 a calibration engine, wherein the calibration engine varies the adjustable
3 transconductance of the at least one transconductor until a sensed differential
4 voltage across the differential node pair is substantially zero.

1 12. (ORIGINAL) The apparatus of claim 11 wherein the calibration engine
2 further comprises a band pass filter to sense the differential voltage at a pre-
3 determined frequency.

1 13. (ORIGINAL) A method of calibrating a common mode feedback block
2 circuit, comprising the steps of:
3 a) providing a common mode feedback block apparatus having a first
4 node and a second node forming a differential node pair, the apparatus further
5 comprising a collective plurality of transconductors including a first plurality of
6 transconductors associated with the first node and a second plurality of

7 transconductors associated with the second node, the collective plurality
8 including at least one adjustable transconductor; and

9 b) adjusting the at least one adjustable transconductor until a
10 differential voltage across the differential node pair is substantially zero.

1 14. (ORIGINAL) The method of claim 13 wherein step b) is performed while
2 the common mode feedback block is in a calibration mode.

1 15. (ORIGINAL) The method of claim 13 wherein step b) further comprises
2 the step of sensing the differential voltage only at a pre-determined frequency.

1 16. (ORIGINAL) The method of claim 13 further comprising the step of:
2 c) switching the common mode feedback block to a normal mode to
3 prevent further transconductance adjustments to the at least one adjustable
4 transconductor.

1 17. (ORIGINAL) The method of claim 13 wherein each of the first and second
2 nodes has at least one associated adjustable transconductor, wherein step b)
3 further includes the step of adjusting each of the associated adjustable
4 transconductors until the differential voltage across the differential node pair is
5 substantially zero.

1 18. (PRESENTLY AMENDED) The method of claim 14 17 wherein the
2 adjustable transconductors are adjusted by increasing a transconductance of a
3 transconductor associated with the first node by an amount δ and decreasing a

4 transconductance of a transconductor associated with the second node by the
5 amount δ .

1 19. (PRESENTLY AMENDED) The method of claim 13 further comprising the
2 step of:

3 c) providing a calibration signal source independent of a common
4 mode node, wherein during calibration the calibration signal source provides a
5 control voltage for ~~the any~~ adjustable transconductor, transconductors, wherein
6 the common mode node provides the control voltage for ~~the~~ remaining
7 transconductors of the collective plurality of transconductors.

1 20. (ORIGINAL) The method of claim 19 wherein the calibration signal source
2 and the common mode feedback block reside on a same integrated circuit die.